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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/750,144
Filing Date: December 29, 2000
Appellant(s): LEWONTIN, STEVE

Andrew T. Spence
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on August 22, 2006 appealing from the Office action mailed October 14, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0049737	SIMON HUNT ET AL.	3-2004
6,567,815	AMANO ET AL.	6,003,033
60/199,858	TRAPANI ET AL.	4-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5, 7, 10-13, 15, 17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon Hunt et al. ("Simon Hunt"), U.S. Patent Application Publication No. 2004/0049737, in view of Amano et al. ("Amano"), U.S. Patent No. 6,003,033.

Regarding independent claim 1, Simon Hunt discloses a method of representing a document written in a markup language and on a mobile terminal adapted to receive said document and render said document on said display (see Abstract), the method comprising:

- *providing a virtual node tree describing the structure of the data types, with each one of the nodes in the virtual node tree respectively corresponding to one element of a specific data type in the document* (see Fig. 2 and [0085]-[0090], [0140], [0146]-[0151] *et seq.*: Simon Hunt teaches a DOM tree. DOM converts the document in memory into a hierarchical node tree that looks like a database record, wherein each node corresponds to an element in the document. DOM provides an interface to access and change the content and structure of an XML file);

- *for each one of the nodes in the virtual node tree, providing a data array including information identifying the relationship of the node to other nodes in the virtual node tree and a reference indicating the location of data corresponding to the node* (see [0016], [0152]: Simon Hunt teaches a data array including information identifying the relationships and locations of nodes. Moreover, it was commonly known to those of ordinary skill in the art and would have been obvious at the time the invention was made to a person having ordinary skill in the art that DOM trees can be implemented as an array (or as a linked list) for the motivational purpose of implementing a organized data structure. Popular

browsers such as Internet Explorer and Mozilla used the array implementation for their DOM trees); and

➢ *obtaining, by a set of software components in the mobile terminal, the data corresponding to the nodes using the reference included in the data array* (see [0016], [0149]: Based on the nodes of the object tree, the Simon Hunt method generates an array of primitive data types for efficiently developing an optimized standard structure).

Simon Hunt does not explicitly disclose *providing a virtual node tree describing the structure of the data types in the document* <u>*but not containing actual document data*</u>.

However, Amano discloses:

> *providing a virtual node tree describing the structure of the data types in the document* <u>*but not containing actual document data*</u> (see Fig. 5; col. 5 lines 50-59 *et seq.* → i.e. Tree Skeleton), and additionally, also discloses:
>
> *for each one of the nodes in the virtual node tree, providing a data array including information identifying the relationship of the node to other nodes in the virtual node tree and a reference indicating the location of data corresponding to the node* (see col. 10 lines 29-40 *et seq.*; Fig. 18).

Since Simon Hunt and Amano (hereinafter "Simon Hunt-Amano") are both from the same field of endeavor, the motivational purpose and advantage of The motivational purpose and advantage is the simplification in defining a tree and generating a data structure corresponding to the tree in memory with the resultant description as disclosed by Amano (see col. 13 lines 1-6) would have been recognized in the pertinent art of Simon Hunt. It would have been obvious at the time the invention was made to a

person having ordinary skill in the art to modify the teaching of Simon Hunt with the teachings of Amano to include a virtual node tree, not containing actual document data.

Independent claim 10 incorporates substantially similar subject matter as independent claim 1 and is rejected along the same rationale.

Regarding claims 2 and 13, Simon Hunt discloses wherein the data in the document is stored in a document block in memory (see [0146] and [0289]).

Regarding claims 3, 11, and 12, Simon Hunt discloses wherein the document is written in XML or a variation of XML and displayed on an XML Browser ([0014], [0050]).

Regarding claims 5, 7, 15, and 17, Simon Hunt-Amano further discloses an array indicating whether a node is a sibling or child (see [0149], [280]), but does not specifically teach indicating whether or not the node is the last sibling in a list of siblings and does not specifically teach a child index and a sibling index in the data array.

However, it was commonly known to those of ordinary skill in the art and would have been obvious at the time the invention was made to a person having ordinary skill in the art that the position of a node can be calculated by its arrangement in the data array respective to its siblings for the purpose of indicating whether or not the node is the last sibling in a list of siblings. It was also commonly known to those of ordinary skill in the art and would have been obvious at the time the invention was made to a person

having ordinary skill in the art that a child and sibling index can be created using data arrays to further clarify the hierarchical standing of particular nodes.

Regarding claims 20 and 21, Simon Hunt-Amano discloses storing data arrays in the memory of the mobile phone/terminal (see paragraphs [0016] and [0150]).

Claims 4, 6, 8, 9, 14, 16, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simon Hunt et al. ("Simon Hunt"), U.S. Patent Application Publication No. 2004/0049737, in view of Amano et al. ("Amano"), U.S. Patent No. 6,003,033, in further view of Call, U.S. Patent Application Publication No. 2002/0143521.

Regarding claims 4 and 14, Simon Hunt-Amano discloses the method with respect to independent claims 1 and 10 above, but does not specifically disclose data arrays including a flags field.

However, Call discloses the use of flags to uniquely identify a selected rule in a manner tailored to the needs of the portion of the XML document (see Call [0362]) for the purpose of signaling a particular condition or status.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teaching of Simon Hunt-Amano with the

teachings of Call to include the use of flag fields to uniquely identify a selected rule in a manner tailored to the needs of the portion of the XML document (see Call [0362]) for the purpose of signaling a particular condition or status.

Regarding claims 6 and 16, Simon Hunt-Amano does not specifically disclose the method wherein a flag in the flags field and identifies the type of the node data. However, Call discloses that the header information for each node identifies the data type of the node (see Call [0368]; see also Figure 6).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teaching of Simon Hunt-Amano with the teachings of Call to include the use of flag fields to uniquely identify the data type of the node for the purpose of signaling a particular condition or status of the data.

Regarding claims 8, 9, 18, and 19, Simon Hunt-Amano discloses the method and mobile phone with respect to independent claims 1 and 10 as discussed above, but does not specifically teach whether the data arrays have a fixed or variable length.

However, it was commonly known to those of ordinary skill in the art and would have been obvious at the time the invention was made to a person having ordinary skill in the art that data arrays can be either fixed or variable for the purpose of holding a preset or expanding number of objects. Furthermore, Call discloses fixed and variable length data as an addressable array to provide efficient data manipulation functions typically performed by hierarchical object oriented data systems, including systems

conforming to the Document Object Model widely used for storing and manipulating XML and HTML character data (see Call [0016] and [0017]) for the purpose of compact data representation to preserve storage space (see Call [0013]).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teaching of Simon Hunt-Amano with the teachings of Call to include the representation of a document structure written in a markup language, wherein the data arrays have a fixed or variable length for the purpose of compact data representation to preserve storage space.

(10) Response to Argument

a. The Cited Simon Hunt Provisional is Prior Art to the Claimed Invention

Appellant contends that the Simon Hunt provisional (60/199,858 - Trapani et al. (hereinafter "the Provisional")) is not prior art relative to the present application because only content that is carried over from the Provisional into the Simon Hunt publication may be considered.

First, Appellant contends that the Provisional does not realize *a data array including information identifying the relationship of a node to other nodes in the virtual node tree and a reference indicating the location of data corresponding to the node.* Examiner respectfully disagrees.

The Provisional discloses a method and apparatus for Internet communication for mobile appliances wherein a markup language (XML, HTML, SGML, etc.) is organized into a DOM node tree (see pg 2, third paragraph; pg. 3, first paragraph, and pg. 8). To expand upon the explanation in the rejection above, DOM is a specification for a programming interface (API) from the W3C that allows programs and scripts to update the content, structure and style of HTML and XML documents by creating a hierarchical virtual tree of the document that looks like a database record. The Provisional discloses a DOM that identifies each node in the document using a unique value (see Provisional - pg. 9) and assigns the unique weight/priority value based on a node's relationships and location relative to other objects (see pgs. 12-14: The process is implemented using a stack array and a node table array). The DOM tree array therefore contains data information describing the tree's structure, the tree's dependencies (root, parent, child, etc.), and references to information content data (font attribute importance) with unique weight/priority values. This particular implementation of the DOM saves time as compared to the node-based interface of the standard W3C DOM.

Moreover, it was commonly known to those of ordinary skill in the art at the time the invention was made to a person having ordinary skill in the art that DOM trees were implemented using an array (or a linked list) for the motivational purpose of implementing a organized data structure of markup documents (DOM data arrays were used specifically to identify the relationship and locations of nodes). Popular Internet browsers such as Internet Explorer and Mozilla specifically used the array implementation for their DOM trees.

Therefore the Provisional discloses, or at the very least made obvious to one of ordinary skill in the art at the time of the invention, a data array including information identifying the relationship of a node to other nodes in the virtual node tree and a reference indicating the location of data corresponding to the node.

Appellant further contends that, although the Provisional discloses subjecting a DOM tree to a normalization process, such a process is separate and distinct from the QDOM cited by the Examiner. Examiner respectfully disagrees.

The process of subjecting a DOM tree to a normalization process is not separate and distinct from the QDOM as cited by the Examiner. The Simon Hunt publication discloses that a QDOM is simply a DOM that identifies each node in the document using a unique value (see paragraph [0089]). Although the Provisional does not specifically use the term QDOM, the Provisional clearly discloses a DOM that identifies each node in the document using a unique value during the normalization process (see Provisional - pg. 9).

The Provisional teaches a DOM tree that assigns a unique weight/priority value based on a node's relationships and location relative to other objects (see pgs. 12-14: The process is implemented using a stack array and a node table array). The DOM tree array therefore contains data information describing the tree's structure, the tree's dependencies (root, parent, child, etc.), and references to information content data (font

attribute importance) with unique weight/priority values. This particular implementation of the DOM saves time as compared to the node-based interface of the standard W3C DOM.

Therefore, the process of subjecting a DOM tree to a normalization process is not separate and distinct from the QDOM as cited by the Examiner. Examiner respectfully submits that the Provisional is prior art to the claimed invention for the reasons stated above.

b. Appellant contends that the Amano Patent Does Not Teach/Suggest that the data structure includes, for each node of a virtual node tree, a reference indicating the location of data corresponding to the node.

First, Examiner respectfully notes that the primary reference, Simon Hunt, already discloses/suggests this limitation, as discussed above, making this particular argument moot. Examiner only referenced Amano as a corollary to further strengthen this particular limitation.

However, regarding Appellant's argument at the top of page 9 of the Appeal Brief, Examiner respectfully disagrees. The Amano patent teaches that pointers reference the location of each of the nodes in the node tree (see Abstract).

c. There is Motivation to Combine Simon Hunt and Amano.

Appellant contends that one skilled in the art would not have been motivated to combine the teachings of Simon Hunt and Amano because the prior art does not suggest the desirability of the combination.

Examiner respectfully disagrees. Simon Hunt and Amano are both from the same field of endeavor (data structure corresponding to a node tree in computer memory). The motivational purpose and advantage is the simplification in defining a tree and generating a data structure corresponding to the tree in memory with the resultant description as disclosed by Amano (see col. 13 lines 1-6). This motivational purpose would have been recognized in the pertinent art of Simon Hunt wherein trees are utilized to simplify and present tree data structure information for electronic devices. Thus, the prior art suggest the desirability of the combination.

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the teaching of Simon Hunt with the teachings of Amano to include a virtual node tree, not containing actual document data.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Paul Nguyen-Ba
November 12, 2006

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